

**Corrected Copy Showing Amendments**

**Specification**

On page 1, paragraph [0005]:

[0005] The second is to vary the pitch of the cogs with a repeating pitch pattern, as disclosed by US Patents 4,2642,314 and 4,832,670. US Patent 4,2624,314 discloses a cog belt with reduced noise. The transverse groove depths, the groove angles, and the distance between the grooves are varied. Similar to US Patent 4,2624,314, US Patent 4,832,670 also discloses multiple elements of the belt construction are varied simultaneously to produce a reduced noise belt. The belt is defined by a repeating sequence pattern along the length of the belt. For both belts, because of the number of variables that must be altered, construction of the belt may be more complex and costly. Also, the disclosed methods are less effective in reducing overall noise levels than inclining the transverse grooves and do not always eliminate the harmonic noise spikes.

**Claims**

1. (Amended) A power transmission belt having an inner surface comprising longitudinally extending grooves and transverse grooves, the transverse grooves are inclined at an angle less than 90° relative to the longitudinal direction of the belt and all the transverse grooves have the same groove depth, the transverse and longitudinal grooves form transverse rows of cogs on the belt inner surface, wherein the rows of cogs have at least three different longitudinal lengths, and the rows of differing lengths are randomly arranged, in a non-sequential manner, along the entire length of the belt.

## COMMENTS AND ARGUMENTS

### Invention Disclosure Statement

The Invention Disclosure Statement filed June 27, 2001 was noted as failing to comply with the provisions of 37 CFR and MPEP "because the second sheet appears to be missing." Applicant's file has been reviewed, and all prior art in the file, prior to receipt of the European Patent Office Search Report, had been cited in the June 27, 2001. It appears that the label of "Sheet 1 of 2" was a typographical error and should have read "Sheet 1 of 1".

Additionally, it was noted that some of the US patent numbers in the specification do not match those on the IDS. The specification has been amended to correct this error.

### 35 U.S.C. § 102(b)

Claims 1-4 have been rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,215,504 to Wong et al. This rejection is traversed for the reasons set forth below.

It is stated in the Office Action that Wong discloses a power transmission belt with transverse grooves 18 that are not perpendicular to the longitudinal direction of the belt, and grooves 12 "which are straight and therefore extend longitudinally". It is asserted that the two grooves 12 and 18 form rows of cogs 13 "which are randomly arranged along the entire length of the belt and have at least six different longitudinal lengths."

Applicants strongly disagree with this interpretation of the belt of Wong and suggest that the teachings of Wong have been grossly distorted and manipulated in a manner that one skilled in the art would not attempt in order to form a rejection of the claims.

Wong does disclose a timing belt. As a timing belt by inherent definition is a continuous endless loop, the indication of which direction is transverse and which is longitudinal is evident by the way lines at the left and right sides of the drawings versus the straight lines at the top and bottom of the drawings. The longitudinal direction of the belt for the belts as illustrated in Figures 2A, 2C, 4A, 4C, 4D, and 4E is from right to left or left to right. The transverse direction is from top to bottom of the drawings.

Grooves 12 have been characterized as meeting the claim limitation of "longitudinally extending grooves." However, grooves 12 do *not* extend in the longitudinal direction, though the grooves have a longitudinal width defined between teeth

13. The only grooves in Wong's belt that extend in the longitudinal direction are the grooves 18 which are also described in the rejection as the transverse grooves since grooves 18 are inclined at angles of less than 90° relative to the longitudinal direction. If grooves 18 are used to meet the claim limitations of the transverse grooves, the belt of Wong still lacks longitudinal grooves to meet all the claim limitations since the only remaining grooves, grooves 12, do not extend longitudinally.

Additionally, by the claim, the longitudinal grooves and the transverse grooves must form transverse rows of cogs; that is cogs that form recognizable rows across the transverse width of the belt. The belt of Wong may be considered to have cogs formed by grooves 18 and 12; Wong calls the cog rows "teeth 13." Claim 1 also recites that the cog rows have "at least three different longitudinal lengths." Despite the assertions in the rejection of the claim, Wong fails to disclose the cog rows having at least three different longitudinal lengths. As clearly seen in Figures 2b and 4b, the cog rows all have the same longitudinal length. Since the rows, or teeth, of Wong all have the same longitudinal length, there can be no random arrangement of different longitudinal length

In order for a reference to fully anticipate a claim under 35 U.S.C. § 102, the reference must disclose each and every element of the claimed invention. Since Wong et al fails to disclose each and every element of the claimed invention, it is respectfully requested that the rejection of the claims as being anticipated by Wong et al. be withdrawn.

35 U.S.C. § 103(a)

Claims 1-5 have been rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,055,090 to Miranti, Jr. in view of 5,328,198 to Janne (Applicants believe this should have been 5,382,198 since the cited patent number was issued to Adams for a "Fluid and tension band-operated hitch adaptor"). This rejection is respectfully traversed for the reasons set forth below.

It should be noted that Miranti has the same disclosure (but different claims) from US Patent 4,832,670, discussed in the Background of the present invention.

Miranti discloses an endless power transmission belt 20 having multiple longitudinal grooves 26 and transverse grooves 28 that form rows of cogs. Miranti teaches that to improve the noise characteristics of the belt, the depths of the transverse grooves may be varied along the length of the belt. Miranti discloses that the depths may be varied, or the spacing between the grooves may be varied, or both may be varied together. Miranti also

teaches that the variations are randomly arranged in sequences, and the sequences are repeated around the length of the belt.

In comparison to the claims, Miranti fails to disclose inclining the transverse grooves as recited, and that the rows of differing lengths are “randomly arranged along the entire length” of the belt as recited. As noted, Miranti teaches that there can be random arrangements of the different lengths, but these random arrangements, and even ones based on mathematical equations, are arranged in sequences, which are then repeated along the length of the belt. Once the sequence is repeated, then a pattern is generated, and there is no random arrangement along the entire length of the belt.

As recited and disclosed by Applicants, the entire length is a random generation, with there being no repeated sequence that follows a previous sequence as taught by Miranti.

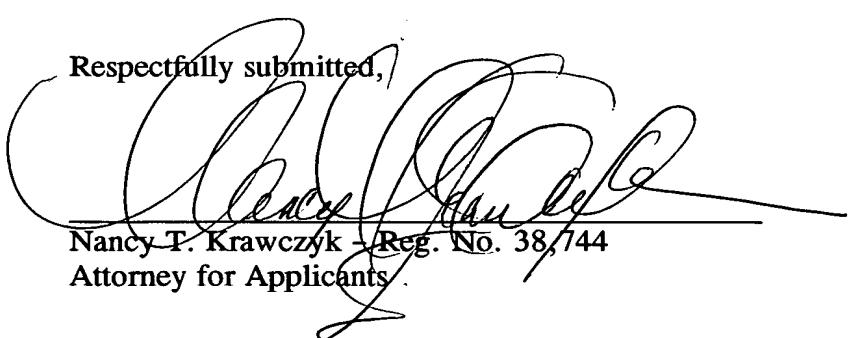
Janne is applied to teach that the transverse grooves may be inclined as recited at an angle of less than 90° relative to the longitudinal direction of the belt.

While it may be within the purview of one skilled in the art to chose to incline the grooves of Miranti to achieve the effects of eliminating the hinge points as taught by Janne, Janne fails to remedy the deficiency of Miranti that the longitudinal lengths of the cog rows should be “randomly arranged along the entire length of the belt.”

To establish *prima facie* obviousness, there 1) must be some suggestion or motivation in the art to modify or combine the references; 2) must be a reasonable expectation of success and 3) the combined references must teach or suggest all the claim limitations. Miranti as modified by Janne fails to teach or suggest all the claim limitations as recited by Applicants. It is respectfully requested that the rejection of the claims as being obvious over Miranti, Jr. in view of Janne be withdrawn.

In light of the amendment and the arguments set forth, Applicant believes the claims now pending in the subject patent application are in condition for allowance. The Examiner is respectfully requested to indicate allowability of all the pending claims.

Respectfully submitted,

  
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